DIVISION OF ENVIRONMENT
QUALITY MANAGEMENT PLAN

PART III:

SITE ASSESSMENT PROGRAM
QUALITY ASSURANCE MANAGEMENT PLAN

Revision 1
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Kansas Department of Health and Environment
Division of Environment
Bureau of Environmental Remediation
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Section 1

INTRODUCTION

1.1 Purpose of Plan

This document presents the comprehensive quality management plan (QMP) for the Site Assessment program. The plan describes the mission, developmental history, organizational structure, environmental monitoring protocols, data handling procedures, and quality assurance (QA) and quality control (QC) requirements of this programs. Standard operating procedures (SOPs) and equipment used in the program are presented in Appendix A.

1.2 Plan Revisions

To be effective and useable, this document must be maintained in an up-to-date condition. As required by the Division of Environment Quality Management Plan (Part I, section 7), the contents of the plan should be reviewed on a semi-annual basis. Minor changes in the report's organizational structure or terminology may be approved by the Section Chief. However, major revisions which substantially change the contents of the document, especially in terms of QA policies or procedures, require the added approval of the Bureau Q/A Representative and the Bureau Director.

Section 2

DESCRIPTION OF PLAN

2.1 Historical Overview

The Site Assessment Program originated in 1984 as part of the Bureau of Waste Management (BWM) and was originally called the "Pre-Remedial" or the "Pre-NPL program". The former Office of Oil Field and Environmental Geology provided geological and technical support to the program. In 1986, KDHE was reorganized and the Bureau of Environmental Remediation (BER) was created. The Site Assessment Program is currently a unit within the Remedial Section of BER. The Site Assessment Program is designed to perform various types of assessments and investigations to assess releases or threat of releases of hazardous substances, pollutants or contaminants at potential sites in Kansas. These investigations are performed under the statutory authority of § 104 and § 105 of the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA). The regulatory authority for Site Assessment Program activities are included in § 300.400-300.425 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as provided by § 105 of CERCLA.

2.2 Mission and Goals

The Site Assessment Program follows a unique process consistent with § 300.400-300.425 of the NCP to assess sites with actual or potential releases of hazardous substances, pollutants or contaminants. After site discovery and referral to the Site Assessment Program (which may occur via complaints, referrals from other governmental agencies, spills or reported releases, or other various means), the site is scheduled for site assessment activity. The mission of the program is to assess the threat to human health and the environment of the citizens of the State of Kansas a contaminated or potentially contaminated site poses. If initial site evaluation indicates the site qualifies for further CERCLA response, the site is entered into the CERCLA database (CERCLIS) for additional CERCLA site assessment consistent with the NCP. The site assessment process and specific types and scopes of assessment activity are included in Appendix B.

2.3 Organization and Responsibilities

The Bureau Director's responsibilities are defined in the BER QA management plan presented in Part II of the QMP. The Bureau Quality Assurance (QA) officer has delegated authority to review and approve Bureau- and section-level quality assurance project plans (QAPPs) and revision to Parts III and IV of the QMP.

The Section Chief is responsible for supervising the Site Assessment Unit Chief. The Section Chief has approval authority for most documents and activities conducted by the Site Assessment Unit not requiring Bureau Manager approval. The Site Assessment Unit Chief is responsible for planning and prioritizing sites and activities assigned by the Section Chief, and to ensure that the requirements

of the program-level QA management plans and SOPs are implemented in a consistent, timely and reliable manner. Working with the Section Chief, the Site Assessment Unit Chief strives to improve the precision, accuracy and reliability of all environmental data collected and products (reports) generated as part of Site Assessment Program activities through the effective allocation of staff and resources.

The Site Assessment Unit contains the Unit Chief, three (3) Site Assessment Project Managers (SAPMs). The SAPMs consist of one Environmental Geologist II, one Environmental Geologist I/II, and two Environmental Scientists I/II. The Environmental Geologist II supervises one Environmental Technician (ET) IV. The Unit Chief also supervises one ET IV. Each SAPM conducts all aspects of site assessment activities outlined above under the supervision of the Unit Chief. The ETs provide field and office support to the SAPMs in the Site Assessment Program.

Section 3

QUALITY ASSURANCE / CONTROL POLICY STATEMENT

The Unit Chief and SAPMs use KDHE, EPA or other developed standard operating procedures (SOPs) for the Site Assessment. All pertinent EPA guidance consistent with the NCP is adhered to for completion of site assessment activities. A generic Quality Assurance Project Plan (QAPP) was recently approved by EPA for use in most of the Site Assessment Program activities. Site-specific QAPPs are only developed for Expanded Site Inspections (ESIs) which typically require a higher level of field effort and generate a greater volume of site-specific data. The Site Assessment Generic QAPP is included in Appendix C. A Site-Specific QAPP Addendum (SSQA) is developed by the SAPM or delegate if sampling activity is provided under the Site Assessment Generic QAPP (see Appendix C). Activities conducted under the generic QAPP are approved by the Unit Chief (or delegated Quality Assurance Officer if the Unit Chief is acting as the SAPM) and distributed to the Bureau QA Representative. For site-specific ESI QAPPs, the approval of the Unit Chief, Section Chief and Bureau QA Representative is required.

All sampling activities conducted by the Site Assessment Program should follow the following general program guidelines:

(1) The objectives of any investigation shall be determined prior to implementation of data collection activities. (An SSQA or site-specific QAPP for ESIs is developed for each site as appropriate).

(2) Sample collection and analysis activities and data management activities shall be subjected to periodic evaluation by supervisory personnel to identify and, if necessary, to correct deficiencies and enhance the overall quality of the Site Assessment Program.

(3) All data collection activities will be accomplished and documented in accordance with the Divisional and Bureau QMP and applicable Standard Operating Procedures (SOPs), included in Appendix A.

Federal guidance documents frequently referenced for quality assurance/ quality control are included in the reference section of the Generic Site Assessment QAPP or in the site-specific QAPPs for ESIs.

Section 4

QUALITY ASSURANCE / CONTROL CRITERIA AND PROCEDURES

4.1 Field Station (Sample) Site Selection

The selection of sampling locations is based on several factors including type and purpose of the sample, representativeness, accessibility (permission to sample), location of existing wells, potential source areas of contamination, potential target/receptor locations, etc. Selection criteria vary depending upon the type of medium being sampled, type of investigation and the purpose of the sampling. The Site Assessment Generic QAPP/SSQA or site-specific QAPP for ESIs will define the data quality needs and QA/QC parameters of concern for a specific project.

4.2 Field Equipment Installation

Generally field staff will use non-dedicated sampling equipment that is either disposable or reusable. Sampling equipment designated for reuse must be decontaminated as specified in the appropriate SOP. Some sampling locations as designated by the project manager may have dedicated sampling equipment left in place.

4.3 Sampling Types

Program staff perform most sampling activities required for completion of Site Assessment activities. The Site Assessment Generic QAPP/SSQA or site-specific QAPP for ESIs will define the data quality needs and QA/QC parameters of concern for a specific project. All sampling will utilize the proper and appropriate levels of personal protective equipment (PPE) and follow the appropriate guidance, standards and SOPs. Data validation and review of QA/QC sampling is performed on every Site Assessment report by a person designated by the Unit Chief or SAPM. The Site Assessment Unit relies heavily on field characterization and analytical methods to conduct site assessment activities.

4.4 Safety Considerations

Field and laboratory staff that conduct environmental investigations encounter potentially dangerous situations on a frequent basis. In addition to the routine possibility of automobile or equipment accidents, employees may encounter extremely slippery surfaces, toxic or hazardous substances, infectious microorganisms, fire or electrical hazards, vicious dogs, belligerent persons, or other threatening situations.

Although it is not possible to predict every conceivable risk that may arise during the course of work, supervisors must ensure that those risks faced by staff on a recurring basis are addressed in the SOPs and are discussed during employee training. Field and laboratory staff are expected to abide by the safety protocols contained within the appropriate SOPs, general and site-specific Health and Safety Plans (HSPs). Non-supervisory employees are expected to bring potentially unsafe practices or situations to the attention of the SAPM. The SAPM shall evaluate the practice or situation and either take the appropriate corrective action or seek the guidance of the Site Assessment Unit Chief.

4.5 Requesting Analytical Services

Site Assessment staff can conduct field analysis according to the appropriate SOP and/or submit environmental samples to the KDHE Division of Health and Environmental Laboratory (DHEL) or use a laboratory with an approved QMP by KDHE's Laboratory Assurance Program on the Comprehensive Laboratory Services contract. Appropriate SOPs, guidance and manufacturer's manuals are to be followed for all in-field analysis, and an appropriate data validation discussion and analysis will be contained in the report.

4.6 Procedures for Assessing Data Precision, Accuracy, Representativeness and Comparability

These are defined and included in the Site Assessment Generic QAPP/SSQAs and any site-specific ESI QAPPs used by Site Assessment staff.

4.6.1 Ongoing Quality Assurance Review and Special Audits

QA review and audits are subject to ongoing review by the Unit Chief and Section Chief. A Remedial Section QA Auditor is responsible for conducting random spot QA audits on all Remedial Section programs under the direction of the Section Chief. The Unit Chief may also conduct random QA audits of work being performed by staff under his supervision. Annual QA Audit Reports are generated by the Unit Chief subject to Section Chief and Bureau QA Officer approval. The Section Chief is expected to track the overall QA performance of the programs within the Remedial Section. The Section Chief provides the Bureau QA Representative with the annual QA reports/summaries for all Remedial Section programs. The Bureau QA Representative is responsible for compliance of all BER programs with QMP requirements and is also responsible for tracking QA performance for all sections within BER. The results are reported by the Bureau QA Representative to the Bureau Manager.

4.6.2 Equipment Calibration and Maintenance

Equipment calibration and maintenance shall be consistent with SOPs, manufacturer's instructions/manuals and sound industrial or scientific practice. The user of equipment should ensure the equipment is checked for proper operation and is current with calibration requirements (if needed) prior to use. The user should record any malfunctions encountered while in the field asociated with the equipment. The user should make sure the malfunctions are communicated to the Site Assessment Unit Chief upon return of the equipment to storage so that appropriate action can be initiated to repair the item of equipment, or initiate actions (e.g., prepare a Purchase Request or Purchase Acquisition) to procure equipment repair.

The Niton X-ray fluorescence (XRF) instrument contains a sealed radioactive source and is licensed through an instrument-specific Radioactive Materials License. All use of the XRF must be under the direction and supervision of the Radiation Safety Officer (RSO) designated in the KDHE/BER Radioactive Materials License #22-B763-01. The RSO is responsible for supervising calibration and maintenance of the XRF. The RSO is also responsible for calibration and maintenance of radiation monitoring equipment used in the Site Assessment Program. The Site Assessment Unit Chief is currently the designated RSO.

Other precision instruments in use by the Site Assessment Program require specific training prior to use and the Site Assessment Unit Chief should be consulted on a site-specific basis for use of such instruments. Geophysical equipment and the KDHE field gas chromatograph (GC) unit require special training and experience in use. Only persons approved by the Site Assessment Unit Chief will be allowed to operate these types of equipment. The SSQA or site-specific ESI QAPP will detail equipment proposed for site-specific use and any subsequent special training requirements.

4.6.3 Quality Control Blanks and Spikes

Quality control samples will be obtained as specified in the SSQA or site-specific ESI QAPP.

4.7 Corrective Action Procedures

Corrective actions are procedures that may be implemented on environmental samples that do not meet QA specifications as determined by EPA or KDHE guidelines, guidance or SOPs or meet QA/QC thresholds as defined in the SSQA or site-specific ESI QAPP. In general, the corrective action procedures are intended to analyze and correct the causes of QA/QC failures. The Site Assessment Unit Chief and SAPMs are responsible for reviewing data validation reports, audit reports and reports of non-compliance with appropriate guidelines and standards, to identify significant or repetitious conditions adverse to quality, or deficiencies regarding the implementation or adherence to required quality assurance practices for site-specific data.

In addition, the site-specific QA Officer designated by the SAPM is required to investigate the source(s) of the problem and is responsible for defining and/or implementing the necessary actions to remedy the problem. Corrective actions may include resampling, reanalyzing samples, or auditing laboratory procedures if a QA/QC failure is documented or suspected as defined in the SSQA or site-specific QAPP.

4.8 Quality Assurance/Control Reporting Procedures

All Site Assessment activities require a data management system including field logs, sample management and tracking procedures, and document control and inventory procedures for both laboratory data and field measurements to ensure that the data collected during the investigation are of adequate quality and quantity to support the findings of the investigation and fulfill data needs identified in the SSQA or site-specific QAPP consistent with KDHE project goals and the NCP.

For each measurement, the data reduction scheme or methods planned for collected data, including all equations used to calculate the concentration or value of the measured parameter, should be described or referenced in the SSQA or site-specific ESI QAPP. The principal criteria employed to validate the integrity of the data during collection and reporting should be referenced. All data collected should be validated to ascertain whether it is appropriate for its intended use as proposed in the SSQA or site-specific ESI QAPP. QA/QC measures implemented or monitored shall be documented in the appropriate section of the site assessment report. The site assessment report should contain an assessment of measurement data QA/QC parameters (such as accuracy, precision and completeness), results of any performance audits, results of system audits, any reported instances

of non-compliance with established guidelines, and any quality assurance problems, together with recommended solutions or corrective actions taken or proposed.

4.9 Data Management

Data management will occur according to methodology specified in the SSQA or site-specific ESI QAPP. Reporting, data storage, interpretation and management requirements will be specified in SOPs, the SSQA or the site-specific ESI QAPP.